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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,401	12/03/2003	Yuri Alexeyevich Plotnikov	RD-28,389-8	7725

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General Electric Company
CRD Patent Docket Rm 4A59
Bldg. K-1
P.O. Box 8
Schenectady, NY 12301

EXAMINER

TERESINSKI, JOHN

ART UNIT	PAPER NUMBER
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2858

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/727,401

Applicant(s)

PLOTNIKOV ET AL.

Examiner

John Teresinski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24,27-30 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-10,15-19,24,27-30 and 32 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 11-14 is/are rejected.
- 7) ☒ Claim(s) 20-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/20/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,491,409 to Flora et al. in view of U.S. Patent No. 5,659,248 to Hedengren et al..

Regarding claims 1 and 11, Flora et al. disclose an eddy current technique including a plurality of sensors operable to sense and generate output signals from the transient electromagnetic flux in a part being inspected, each of said sensors having a differential output comprising a positive and a negative output (column 5 lines 18-27), at least one drive coil disposed adjacent to said sensors and operable to transmit transient electromagnetic flux into the part being inspected (20), a first and second multiplexer/multiplexers arranged on said sensor array board and operable to switch between the positive and negative outputs of said sensors (column 5 lines 35-40, 47-50). Flora et al. does not disclose a sensor array board, printed circuit board or the plurality of sensors arranged on the sensor array board/printed circuit board. Hedengren et al. disclose an eddy current measurement array structure including a plurality of sensors (column 5 lines 31-35) operable to sense and generate output signals from the transient electromagnetic flux in a part being inspected (column 5 lines 50-67) and the plurality of sensors arranged on a printed circuit board (column 8 lines 15-19). It would have been obvious to one of

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ordinary skill in the art at the time the invention was made to include the plurality of sensors arranged on a printed circuit board as taught by Hedengren et al. into Flora et al. for the purpose of providing a scanning approach which provides complete coverage of the inspection surface (column 6 lines 59-60).

Regarding claims 2 and 3, Flora et al. does not disclose a connector operable to connect the multiplexers to an external device and disposed on the sensor array board. Hedengren et al. disclose a connector operable to connect the multiplexers to an external device and disposed on the sensor array board (column 4 lines 27-36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a connector operable to connect the multiplexers as taught by Hedengren et al. into Flora et al. for the purpose of providing an efficient means of retrieving sensor output.

Regarding claim 4, Flora et al. disclose the sensors forming a linear array (Fig. 19).

Regarding claims 12-14, Flora et al. disclose the device as cited above. Flora et al. does not disclose a plurality of sensors arranged to form a two dimensional array on each of the sensor boards, or a plurality of first and second multiplexers. Hedengren et al. disclose a plurality of sensors arranged to form a two dimensional array on each of the sensor boards (Fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a plurality of sensors arranged to form a two dimensional array on each of the sensor board as taught by Hedengren et al. into Flora et al. for the purpose of providing a scanning approach which provides complete coverage of the inspection surface (column 6 lines 59-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a plurality of sensors arranged in a linear array on each of the sensor boards, or a

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plurality of first and second multiplexers since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Flora et al.* and *Hedengren et al.* as applied to claim 1 above and further in view of U.S. Patent No. 6,150,809 *Tiernan et al.*.

Regarding claim 5, *Flora et al.* as modified does not disclose magnetic shielding between sensors and the drive coil. *Tiernan et al.* disclose an array of sensors for detection anomalies in conductive bodies with a drive coil and magnetic shielding between sensors and the drive coil (column 14 lines 59-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include magnetic shielding between sensors and the drive coil as taught by *Tiernan et al.* into *Flora et al.* as modified for the purpose of increasing the sensitivity of the sensors (column 15 lines 25-30).

Allowable Subject Matter

Claims 20-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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The following is an examiner's statement of reasons for allowance:

Regarding claim 20:

The primary reason for the allowance of claim 20 is the inclusion of a sensors positioned at an edge of each of the sensor array boards to form respective linear arrays, wherein each of the sensors has an axis of sensitivity that is oriented substantially normal to the edge of the sensor array board. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Claims 21-23 are allowed due to their dependency on claim 20.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claims 6-10, 15-19, 24, 27-30 and 32 are allowed.

Response to Arguments

Applicant's arguments with respect to claims 1-32 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's arguments, the recitation "pulsed eddy current sensor" has not been given patentable weight because the recitation occurs in the preamble. A preamble is

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generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Conclusion

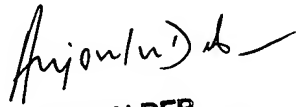
Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Teresinski whose telephone number is (571) 272-2235. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (571) 272-2233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ST
JT

January 6, 2005


ANJAN DEB
PRIMARY EXAMINER